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Studies on the Subfamily Steninae (Coleoptera, Staphylinidae) from Japan, XVII. Descriptions of Five New Species of the Genus *Stenus* Latreille

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Abstract Five new species of the genus *Stenus Latreille, S.* (*Nestus*) *gatenpio, S.* (*Nestus*) *giushin, S.* (*Nestus*) *zaishin, S.* (*Tesnus*) *takedai and S.* (*Hypostenus*) *hannia,* are described. *Stenus zimmermanni* is first recorded from Chiba Prefecture, and its male genitalia are figured.

Key words: *Hypostenus, Stenus,* Steninae, Staphylinidae.

The genus *Stenus* Latreille is charcterized by the cylindrical body, elongate maxillary palpi and prementum, in addition to extraordinarily convex compound eyes which are similar in shape to those of killifish. The Japanese fauna of the genus was first studied by Sharp (1874, 1888, 1889). After that, numerous contributions (Bernhauer, 1907, 1912; Cameron, 1930; Nakane, 1963; Puthz, 1968a, 1971, 1973, 1974, 1987; Hromádka, 1979a-d, 1980, 1982; etc.) were made to clarify the fauna, for the most part, by giving descriptions of additional new species. Recently, the genus was briefly revised by Naomi, the subgenus *Hemistenus* in Naomi(1988a), the subgenus *Nestus* in Naomi (1988b), the subgenus *Stenus* s. str. in Naomi (1988c), the subgenus *Tesnus* in Naomi (1989a), the subgenus *Parastenus* in Naomi(1987, 1988d,e) and the subgenus *Hypostenus* in Naomi (1988f, 1989b-d, and in press). Thus, about 130 species in total are recorded from Japan at present.

Just after finishing the taxonomic study of the genus *Stenus,* I received about 500 stenine specimens through the courtesy of Professor Masataka Sato (Nagoya Women's University) and Shuhei Nomura (Kyushu University). In these lots, I found 5 additional new species collected from various parts in Japan, and am going to describe them herein under the names of *Stenus gatenpio, S. giushin, S. zaishin, S. takedai* and *S. hannia.* In addition, their male genitalia are figured for comparison.

Stenus (Nestus) gatenpio sp. nov.

Male. Body length: 3.1 mm.

Body entirely black and moderately shiny; maxillary palpi black except for yellowish brown 1st segment; antennae dark brown except for 4 black apical segments; legs black.

Head distinctly narrower than elytra (0.84 : 1), 1.64 times as broad as long, labrum and frontoclypeal area with silver white hairs which are moderate in length, postero-internal parts of antennal insertions distinctly elevated and shiny, interocular area gently concave, with a pair of longitudinal depressions; median elevated part between the depressions narrow, distinct and strongly shiny; surface covered with punctures except for a pair of impunctate small round areas at about posterior 1/3 along inner margins of eyes; punctures very dense, rough and rugose, each bearing a short hair on interocular area, small, round and almost regular on neck area. Antennae short, reaching about the middle of pronotum, 8th segment smallest and spherical, 9th to 11th forming a relatively large and loose club, with relative lengths of segments from base to apex as 10 : 11 : 18 : 12 : 11 : 11 : 11 : 6 : 10 : 11 : 11.

Pronotum shorter than elytra (0.73 : 1), about as long as broad, broadest near the middle; disk with three round and shallow depressions, two situated at sides of median line near the middle, one near the middle of basal part, without median longitudinal depression; punctures round, dense and almost regular, interstices between punctures shiny and faintly sculptured.

Elytra about as long as broad, with salient humeri, side margins a little gradually narrowed posteriorly, hind margins together forming a very shallow and arcuate emargination; punctures very

dense and large, each with a short hair which is usually curved posteriorly.

Legs moderate in length and thickness, hind tarsi 0.72 times as long as hind tibiae.

Abdomen distinctly narrowed posteriorly, with paratergites horizontal in position and sparsely punctured in 3rd to 6th segments; 3rd to 7th terga each with elevated basal part and 3 longitudinal keels, of which the median one is longer than the lateral ones in each segment, the keels becoming gradually smaller posteriorly from 3rd to 7th terga; each tergum covered with punctures round and moderate in density and size except for a small area just behind median keel; 6th sternum flat at the middle of posterior part; 7th sternum depressed and smooth at posteromedian part, the depression becoming deeper toward posterior margin which is arcuately emarginate, sides of the depression ridged; 8th sternum with a moderate V-shaped emargination at the middle of posterior margin; 9th sternum with a pair of pointed apicolateral projections, a tuft of long hairs situ-

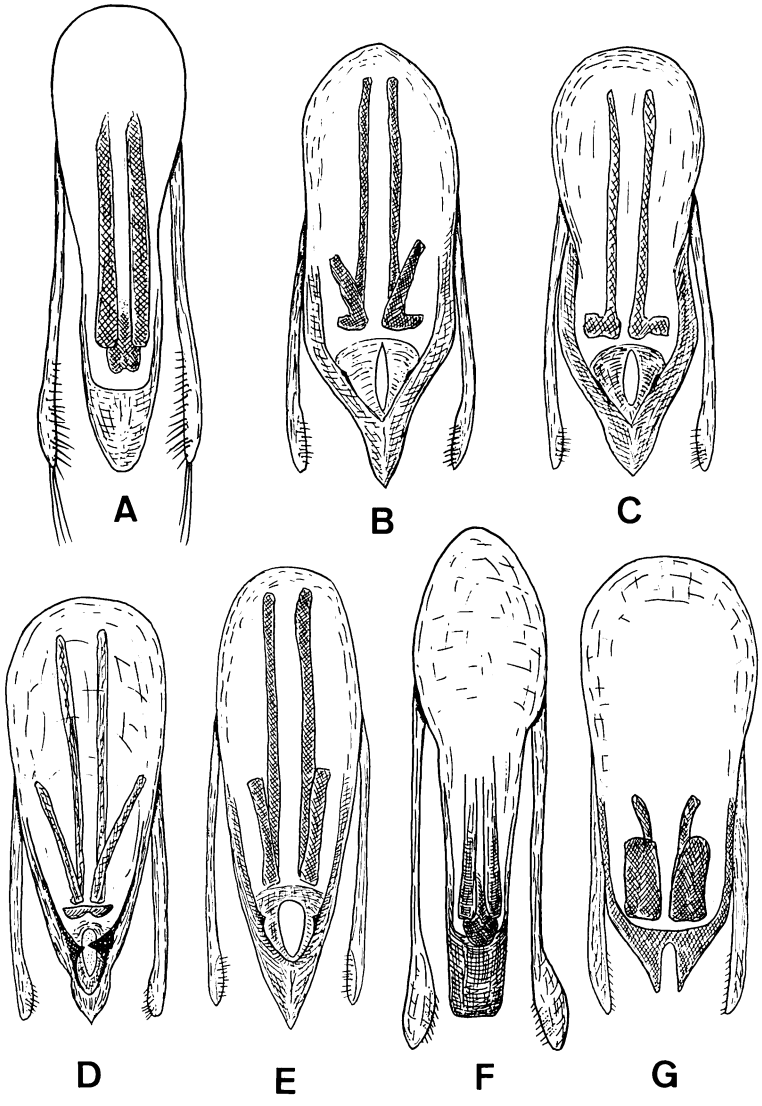

Fig. 1. A, *Stenus gatenpio* sp. nov.; B, C, *S. zimmermanni* Puthz (B: Mt. Takao, Tokyo; C: Kimitsu, Chiba); D, *S. giushin* sp. nov.; E, *S. zaishin* sp. nov.; F, *S. takedai* sp. nov.; G, *S. hannia* sp. nov. A-G, Male genitalia in dorsal view.

ated at base of the each projection, and with posterior margin arcuately emarginate and very minutely serrate. Genitalia (Fig. 1 A) with median lobe elongate, bulbous at base, narrow in apical part, weakly constricted near the middle, moderately sclerotized in apical 1/6 and entire at apex; parameres slender, extending a little before apex of median lobe, each weakly swollen at apical outer part, with short and sparse hairs at apico-internal side and a few long hairs at apex.

Female. Unknown.

Holotype, male (CBM-ZI 13001), Asahimura, Niigata Pref., 2. vii. 1985, S. Nomura leg.

Distribution. Japan (Honshu).

Remarks. This distinct species belongs to the *S. circularis* group and is characterized by the head narrower than elytra, large elytra, black legs and 3 longitudinal keels on each of 3rd to 7th abdominal terga. This species runs to the 10th couplet (*S. circularis* Gravenhorst and *S. misael* Bondroit) in the key to the species of the subgenus *Nestus* (Lohse, 1964), but is separable from them by the black legs and the median lobe of male genitalia slenderer and entire at apex. In the Japanese members of the subgenus *Nestus,* this species may be similar to *S. sexualis* Sharp, but is separable from the latter by the body and legs entirely black and the shorter parameres in the male genitalia.

Stenus (Nestus) zimmermanni Puthz

Stenus zimmermanni Puthz, 1968, Ent. Rev. Japan 20(1/2):43; Hromádka, 1979b, Reichenbachia 17 (15):116.

Description of male. Sixth sternum smoothly convex with a very shallow emargination at the middle of posterior margin; 7th sternum depressed at posteromedian part, the depression gradually broadened toward posterior margin which is shallowly emarginate, sides of the depression not ridged; 8th sternum with a moderate U-shaped emargination; 9th sternum with a pair of apicolateral projections, the projections short and obtusely pointed, posterior margin between the projections shallowly and arcuately emarginate. Genitalia robust, median lobe broad, subparallel-sided in the specimen from Mt. Takao (Fig. 1 B), gently constricted near the middle in the specimen from Chiba (Fig. 1 C), moderately sclerotized at the broad peripheral area in apical half, with sharply pointed apex, apical subtransparent area between sclerotized rims elongate spindle-shaped, innerside of sclerotized rim without distinct tooth; parameres slender, extending a little before apex of median lobe, with sparse setae at apico-internal parts.

Specimens examined. 1 male, Mt. Takao, Tokyo, 6. vii. 1985, M. Tao leg.; 1 female, same locality, 14. v. 1977, M. Tao leg.; 7 exs., Fudago, Kimitsu, Chiba Pref., 20. iv. 1989, S. Naomi leg.

Remarks. This species was described by Puthz (1968a) on the basis of one female specimen from Mt. Takao, Tokyo. After that, Hromádka (1979b) described the male genitalia of this species on the basis of the specimen collected from Mt. Kasuga, Nara Prefecture. In the course of this study, I had an opportunity to dissect a male specimen of what could be regarded as *S. zimmermanni* collected at its type locality. Consequently, it was clarified that the genitalia in the Takao specimen showed some difference from those described by Hromádka (1979b). Judging from its general shape, the latter may belong to *S. nipponomontanus* described from Ohdaigahara in Nara Prefecture by Naomi (1988b).

Stenus (Nestus) giushin sp. nov.

Male and female. Body length: 2.6-2.9 mm.

Body black and moderately shiny; labrum black; antennae brown to dark brown; maxillary palpi yellow to yellowish brown; legs reddish brown to brown except for blackish knees and tarsi.

Head about as long as elytra, 1.68 times as broad as long, frontoclypeal area with very fine and sparse punctures, interocular area subflat or weakly concave, with a pair of longitudinal depressions; median part between the depressions gently convex; punctures very dense, round, sometimes rough and subrugose, interstices between punctures very shiny, without sculpture. Antennae short and moderately thick, reaching a little before the middle of pronotum, 8th smallest and globose, distinctly narrower than 9th, 9th to 11th forming a club, with relative lengths of segments from base to apex as 11 : 11 : 15 : 11 : 11 : 10 : 9 : 5 : 8 : 9 : 13.

Pronotum as long as elytra, a little longer than broad (1.08 : 1), broadest at about the middle; disk almost even, without median longitudinal depression; punctures very dense, round, sometimes

subrugose, interstices between punctures very narrow, shiny and indistinctly sculptured.

Elytra broader than long (1.20 : 1), strongly constricted at base, side margins rounded, hind margins together forming a very shallow and arcuate emargination; disk uneven, with punctures round to elliptical, rough, subrugose, and a little larger than those on pronotum. Hind wings rudimentary and not functional.

Legs moderate in length; femora thick; hind tarsi 0.59 times as long as hind tibiae.

Abdomen very thick and broad, slightly narrowed posteriorly; paratergites raised and distinct, with sparse punctures on 3rd to 6th segments; 3rd to 5th terga each with 3 longitudinal keels at base, punctures moderate in density and size, interstices between punctures indistinctly sculptured; punctures on 7th tergum smaller and sparser than those on 3rd.

Male. Sixth sternum flat at posteromedian part, with a shallow and wide emargination at posterior margin which is furnished with a row of long hairs; 7th sternum deeply depressed and smooth at posteromedian part, the depression becoming deeper toward posterior margin which is arcuately emarginate, sides of the depression distinctly ridged; 8th sternum with a moderate V-shaped emargination; 9th sternum with a pair of very minute apicolateral projections, posterior margin between the projections truncate and minutely serrate. Genitalia (Fig. 1 D) with median lobe bulbous at base, gradually narrowed apically, pointed at apex, with a weak constriction and an elongate spindle-shaped subtransparent area at apical 1/8, a pair of pointed teeth turning inside at sides of the subtransparent area; parameres slender, reaching a little before apex of median lobe, with short hairs at apico-internal sides.

Female. Abdomen broader than in male; 8th sternum entire.

Holotype, male (CBM-ZI 13002), Ryumon Valley, Saga Pref., 23. x. 1977, H. Ohishi leg. Paratypes, 28 exs., same data as holotype; 2 exs., Imazu, Fukuoka City, Fukuoka Pref., 29. i. 1989, S. Nomura leg.; 2 exs., Mt. Hiko, Fukuoka Pref., 7. v. 1971, K. Takeno leg; 1 ex., same locality, 2. iv. 1971, M.T. Chujyo leg.; 3 exs., Mt. Seira, Imari City, Saga Pref., 3. iii. 1985, S. Nomura leg.; 2 exs., Mt. Kyogatake, Saga Pref., 6. vi. 1983, S. Nomura leg.; 1 ex., Mt. Kurodake, Oita Pref., 28. v. 1986, S. Nomura leg.; 3 exs., Kikuchi Valley, Kumamoto Pref., 11. iv. 1981, S. Naomi leg.

Distribution. Japan (Kyushu).

Remarks. This new species is allied to *S. zaishin* sp. nov., but the depressed area is broader on the 7th sternum in male, and a weak constriction is present at the apical 1/8 of the median lobe in the male genitalia.

Stenus (Nestus) zaishin sp. nov.

Male and female. Body length: 2.6-3.1 mm.

Closely allied to *S. giushin* sp. nov. in general appearance and coloration, but different from the latter in the following details:

Body a little larger (2.8-3.1 mm), black and moderately shiny; antennae darker than those in *S. giushin* sp. nov.

Head a little narrower than (0.94 : 1) to as long as elytra, 1.67 times as broad as long, interocular area weakly concave, with a pair of depressions, the depressions running subparallel and shallow, median part between the depressions weakly convex; punctures dense, regular and round, interstices between punctures shiny, without sculpture. Antennae a little shorter than those in *S. giushin* sp. nov., 8th to 10th segments becoming gradually broader apically, each almost globose, with relative lengths of segments from base to apex as 11 : 11 : 13 : 10 : 10 : 9 : 9 : 5 : 6 : 8 : 11.

Pronotum as long as elytra, about as long as broad, broadest at the middle; punctures dense, large and regular, a little larger than those on head, interstices between punctures distinctly sculptured.

Elytra broader than long (1.33 : 1), strongly constricted at base; punctures similar to those in *S. giushin* sp. nov. Hind wings atrophied and not functional.

Abdomen very broad and moderately convex dorsally; punctures round to elliptical, almost regular and moderate in density, interstices between punctures distinctly, sometimes faintly sculptured.

Male. Secondary sexual characters on 6th to 9th abdominal sterna basically the same in structure as in *S. giushin* sp. nov., but the depressed area is a little narrower, and the ridges at the sides of the depressed area lower in the 7th sternum. Genitalia (Fig. 1 E) with median lobe a little slenderer than

those in *S. giushin* sp. nov., broadest at about basal 1/3, then gradually narrowed toward pointed apex which is moderately sclerotized, subtransparent area at apicomedian part a little broader than in *S. giushin* sp. nov., teeth at sides of the area smaller than in *S. giushin* sp. nov.; parameres not reaching apex of median lobe, thin, with sparse and short hairs at apico-internal sides.

Female. Abdomen distinctly broader than in male; 8th sternum entire.

Holotype, male (CBM-ZI 13003), Mt. Tsurugi, Tokushima Pref., 15-17. x. 1980, S. Naomi leg. Paratypes, 22 exs., same data as holotype; 1 ex., same locality as holotype, 19-20. vi. 1981, S. Naomi leg.

Distribution. Japan (Shikoku).

Remarks. This new species is allied to *S. giushin* sp. nov., but the 2nd antennal segments are shorter, the depressed area is narrower and a little shallower on the 7th sternum, the constriction is absent from the apical area of the median lobe in the male genitalia.

Of the Japanese members of the *S. humilus* group, four species, *S. zimmermanni* Puthz, *S. sakura* Hromádka, *S. giushin* sp. nov. and *S. zaishin* sp. nov., are classified into a group characterized by the following two points: presence of subtransparent area at the subapicomedian part of the median lobe in the male genitalia, and elytra strongly constricted at base in accordance with the atrophism of hind wings. In this paper, I call the group as the *S. zimmermanni* subgroup within the *S. humilus* species-group. Its members are separable from one another by the following key:

1(2) Subtransparent area at subapicomedian area of median lobe of male genitalia almost rounded·····*S. sakura* Hromádka

2(1) Subtransparent area at subapicomedian area of median lobe of male genitalia almost spindle-shaped.

3(4) Sixth sternum almost smoothly convex at posteromedian part in male; male genitalia broader ····· *S. zimmermanni* Puthz

4(3) Sixth sternum flat at posteromedian part in male; male genitalia narrower.

5(6) Seventh sternum with a narrower and shallower depression at posteromedian part in male; median lobe of male genitalia without constriction near apex ····· ····· *S. zaishin* sp. nov.

6(5) Seventh sternum with a broader and deeper depression at posteromedian part in male; median lobe of male genitalia constricted near apex ····· *S. giushin* sp. nov.

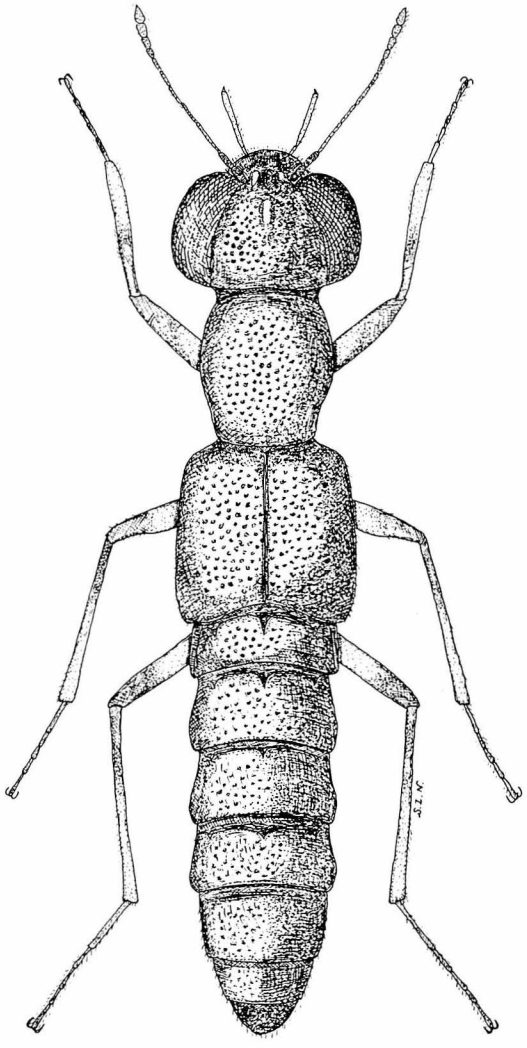

Fig. 2. *Stenus takedai* sp. nov.

Stenus (Tesnus) takedai sp. nov.

Male and female. Body length: 4.0-4.2 mm.

Body (Fig. 2) entirely black and very shiny, with weak metallic luster; labrum black, with anterior margin reddish; antennae with 1st to 2nd segments black and shiny, 3rd to 11th reddish brown; maxillary palpi yellow; legs yellowish

brown to brown, knees more or less infuscate.

Head about as broad as elytra, 1.47 times as broad as long, frontoclypeal area narrow, deflected, with yellowish and moderately long hairs, interocular area weakly concave, with indistinct median longitudinal elevated area; punctures round to elliptical, regular, dense and moderate in size, interstices between punctures indistinctly sculptured. Antennae short, thin and reaching about the middle of pronotum, 8th to 11th segments gradually broadened apically, 11th pointed, with relative lengths of segments from base to apex as 10 : 10 : 18 : 12 : 10 : 8 : 7 : 5 : 6 : 7 : 11.

Pronotum shorter than elytra (0.91 : 1), longer than broad (1.14 : 1), broadest near the middle, weakly constricted at base; surface almost even, without median longitudinal depression; punctures very dense, round and slightly irregular, interstices between punctures very narrow, smooth and shiny.

Elytra about as long as broad, parallel-sided, with developed humeri, hind margins together forming a shallow and arcuate emargination which is about 0.67 times as broad as elytra; punctures very dense, round, regular and a little larger than those on pronotum, interstices between punctures very narrow and shiny.

Legs elongate; hind tarsi 0.74 times as long as hind tibiae.

Abdomen very slender and pointed at apex; paratergites present only in 3rd segment, 3rd to 6th terga each with one median and two lateral longitudinal keels; punctures round, small and regular, interstices between punctures about as long as diameters of punctures and indistinctly sculptured on 3rd tergum, punctures becoming gradually smaller and sparser toward apex.

Male. Seventh sternum with a small depression at the middle of posterior margin which is weakly and arcuately emarginate, sides of the depression weakly ridged; 8th sternum with a medium-sized V-shaped emargination at the posterior margin; 9th sternum arcuately emarginate, with acutely pointed apicolateral projections. Genitalia (Fig. 1 F) bulbous in basal 2/5, slender and gradually narrowed posteriorly in apical 3/5, with truncate apex; parameres extending beyond apex of median lobe, slender and almost straight, with spatulate apical parts, inner sides of apical parts with sparse and short hairs.

Female. Abdomen thicker than in male and subparallel-sided; 8th sternum entire at posterior margin.

Holotype, male (CBM-ZI 13004), Midoriku, Yokohama City, Kanagawa Pref., 15. vi. 1985, M. Tao leg. Paratypes, 2 exs., same data as holotype; 1 ex., same locality as holotype, 5. v. 1987, M. Tao leg; 2 exs., Tsurumiku, Yokohama City, Kanagawa Pref., 16. v. 1987, M. Tao leg.; 2 exs., Suidoubashi, Shonanmachi, Chiba Pref., 19. xi. 1989, T. Takeda leg.

Distribution. Japan (Honshu).

Remarks. Stenus takedai sp. nov. is closely allied and very similar in appearance to *S. laborator* Sharp, 1889, whose male genitalia were illustrated in Puthz (1968b). This new species is, however, clearly distinguished from the latter by the punctures sparser and smaller on the abdominal terga, the smaller depression and lower ridges on the 7th sternum in male, the median lobe of male genitalia slender in apical 3/5, without apicolateral expansion, and the parameres spatulate at apices.

This new species is named in honor of an amateur entomologist, Mr. Takuaki Takeda of Funabashi City, Chiba Prefecture in appreciation of important stenine specimens to me.

Stenus (Hypostenus) hannia sp. nov.

Male and female. Body length: 2.8-3.2 mm.

Head black, with frontoclypeal area and sometimes, anterior part of interocular area also, reddish brown, labrum reddish; pronotum, elytra and abdomen reddish to reddish brown, with apical part of abdomen more or less infuscate; antennae with 1st to 2nd segments pale yellow to yellow, 3rd to 11th reddish to pale reddish brown; maxillary palpi reddish brown; legs yellow to reddish yellow.

Head a little broader than elytra (1.07 : 1), 1.63 times as broad as long, frontoclypeal area reticulately sculptured, without puncture except for median beak-shaped protuberance which is covered with fine punctures, interocular area very weakly concave, with a pair of depressions, the depressions longitudinal and shallow, median part between the depressions gently convex; punctures round, umbilicate, distinct, sparser on the median area than near inner margins of eyes, interstices between punctures distinctly sculptured. Antennae reaching posterior 3/4 of pronotum, 8th seg-

ment smallest, distinctly narrower than 9th, 9th to 11th forming a loose club, with relative lengths of segments from base to apex as 10 : 7 : 17 : 10 : 10 : 7 : 8 : 4 : 6 : 7 : 9.

Pronotum as long as elytra, about as long as broad, broadest at anterior 1/3, very weakly constricted at base, side margins much rounded in anterior 4/5; surface almost even, with a median longitudinal depression which is elongate oval in shape and about 1/3 times as long as pronotum; punctures very dense and subrugose, interstices between punctures distinctly sculptured.

Elytra broader than long (1.15 : 1), weakly constricted at base, hind margins together forming a very shallow and arcuate emargination; punctures dense, subrugose, round and indistinct, interstices between punctures indistinctly sculptured and shiny. Hind wings reduced and not functional.

Legs moderate in length; femora thick; hind tarsi 0.63 times as long as hind tibiae.

Abdomen subparallel-sided; punctures round, small and distinct, interstices between punctures shiny and indistinctly sculptured.

Male. Fourth (or 5th) to 6th sterna each flat at posteromedian part, 6th sternum very weakly emarginate in an arc at posterior margin; 7th sternum with a median shallow depression in full length, each side of the depression with a low ridge, hind margin almost straight; 8th sternum with a medium-sized V-shaped emargination at the middle of posterior margin; 9th sternum with a pair of short and pointed apicolateral projections, posterior margin between the projections straight and minutely serrate. Male genitalia (Fig. 1 G) broad, median lobe bulbous at base, bifurcate (or very deeply and narrowly emarginate) at apex which is moderately sclerotized, internal armatures composed of two pairs of plates, of which the posterior ones are very large and elongate subquadrangular; parameres slender and straight, with short hairs at apico-internal margins.

Female. Abdomen broader than in male; 8th sternum weakly pointed at the middle of posterior margin.

Holotype, male (CBM-ZI 13005), Chuzenji, Nikko, Tochigi Pref., 24. vii. 1985, S. Nomura leg. Paratypes, 30 exs., same data as holotype.

Distribution. Japan (Honshu).

Remarks. Judging from the coloration of head and the shape of male genitalia, *Stenus hannia* sp. nov. belongs to the *oni* group in the *S. rufescens* complex. It is similar in outline to *S. oni* Naomi, 1988, but is separable from the latter by the head a little broader than elytra, the frontoclypeal area reddish brown, the median lobe of male genitalia with a very deep and narrow U-shaped emargination at the middle of apical margin, and internal armatures of male genitalia composed of two pairs of plates.

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日本産メダカハネカクシ亜科（甲虫目，ハネカクシ科）の分類学的研究. XVII. メダカハネカクシ属の5新種の記載

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本論文で *Nestus* 亜属に属する3新種，*Stenus gatenpio*，*S. giushin*および*S. zaishin*，*Tesnus* 亜属に属する1新種，*S. takedai* および *Hypostenus* 亜属に属する1新種，*S. hannia* の合計5新種を記載した．*S. gatenpio*は，*S. circularis* 群に分類され，日本産の既知種の中では *S. sexualis* Sharp に似る．*S. giushin* および *S. zaishin* は，*S. zimmermanni* Puthz および*S. sakura* Hromádka とともに *S. humilus*群に属するが，これら4種は，1）後翅の退化に伴う上翅基部のくびれ，および2）雄交尾器中央片の先端中央に半透明部があることにより，*S. humilus* 群の中では，*S. zimmermanni* 亜群として分類された．加えて，これら4種への検索表を作成した．*S. takedai* は，*S. laborator* Sharp に似るが，雄交尾器中央片先端部が左右に広がらないことにより区別できる．*S. hannia* は，*S. oni* 群に属し，*S. oni* Naomi に似るが，頭部は上翅より幅が広く，雄交尾器中央片先端部に狭いU字状の切れ込みがあることにより区別される．